

REMARKS

Claims 1-19 and 43 are now pending in the application. The claims withdrawn as a result of the restriction requirement have been cancelled without prejudice to their presentation in a divisional application. New claim 42 is supported by the original disclosure and claims as a whole, particularly those passages describing the conductive materials other than carbon black that may be used. The Examiner is respectfully requested to reconsider and withdraw the rejection(s) in view of the amendments and remarks contained herein.

RESTRICTION REQUIREMENT UNDER 35 U.S.C. § 121

Restriction has been required between Invention I, represented by Group I claims 1-19, drawn to a composition of conductive ink; Invention II, represented by Group II claims 20-26, drawn to a method of printing; Invention III, represented by Group III claims 27-35, drawn to an article; Invention IV, represented by Group IV claims 36-38, drawn to a method of making an electrical circuit or component; and Invention V, represented by Group V claims 39-42, drawn to an electrical circuit or component. Applicants affirm election of Invention I, with Group I claims 1-19, without traverse.

Rejection Under 35 U.S.C. § 102(b) over Yoshimura et al.

Claims 1-5, 8, 10-12, 14, and 15 have been rejected as anticipated by Yoshimura et al, JP 11-302587. Applicants respectfully traverse the rejection as applied to the amended claims and request reconsideration.

The claims as amended are novel over Yoshimura, JP 11-302587 because the Yoshimura document does not disclose an ink composition that includes both a conductive particulate

material and a conductive flake material. Further, although the aluminum powder pigment may or may not be conductive since aluminum pigments for water based compositions are given a surface treatment so as not to be reactive with the water. See, e.g., U.S. Patents No. 5,691,033, 5,658,976, 5,527848, 4,885,032, and 4,453,982. Even if the pigment in the composition remains electrically conductive, there is no indication in the Yoshimura document that it is included in an amount sufficient to make the ink conductive when printed. It appears that “metallic” refers to an aesthetic appearance of the ink. See the Color Development Test, “excellent metallic luster.”

Accordingly, Applicants submit that the Yoshimura reference does not anticipate the present invention. Withdrawal of the rejection and reconsideration of the claims are respectfully requested.

Rejection Under 35 U.S.C. § 102(b) over Okuda et al.

Claims 1-3, 5-7, 9, 12-14, 16, and 18 have been rejected as anticipated by Okuda et al, US Patent 5,705,098, with citation of JP 08-231906 as showing that the Okada styrene copolymers inherently have an acid value of 0.5 to about 15 mg KOH/g. Applicants respectfully traverse the rejection as applied to the amended claims and request reconsideration.

The claims as amended are novel over the Okuda patent because the Okuda patent also does not disclose an ink composition that includes both a conductive particulate material and a conductive flake material. The Okuda document appears to describe only tin oxide fine particles.

Moreover, the present invention is drawn to a conductive ink, as the Office Action admits in the restriction requirement, but the Okuda patent does not appear to describe or even to mention inks. Further, the discussion of paint vehicles in the Okuda patent does not suggest what might be appropriate for an ink.

Further, regarding claim 6 specifying an acid value of 0.5 to about 100 mg KOH/g and claim 9 specifying an acid value of 0.5 to about 15 mg KOH/g, inherency is only demonstrated when the missing element “is ‘necessarily present,’ not merely probably or possibly present, in the prior art.” *Trintec Indus., Inc. v. Top-U.S.A. Corp.*, 63 USPQ2d 1597 (Fed. Cir. 2002) (citing *In re Robertson*, 169 F.3d 743, 745, 49 USPQ2d 1949, 1950-51 (Fed. Cir. 1999) (citing *Continental Can Co. USA, Inc. v. Monsanto Co.*, 948 F.2d 1264, 1268, 20 USPQ2d 1746, 1749 (Fed. Cir. 1991))). There is nothing to suggest in the description of the Okuda paint or in the cited abstract describing an ink jet ink that the Okuda copolymer must inevitably have an acid value that is the same as that of the ink jet inks of the cited abstract. Applicants also point out that, even if such were the case, neither reference mentions the acid numbers of claim 9.

Accordingly, for all of these reasons, Applicants submit that the Okuda reference does not anticipate the present invention. Withdrawal of the rejection and reconsideration of the claims are respectfully requested.

Rejection Under 35 U.S.C. § 102(b) over Taguchi

Claims 1, 3-6, 8, 9, and 12 have been rejected as anticipated by Taguchi, U.S. Patent No. 3,349,055. Applicants respectfully traverse the rejection as applied to the amended claims and request reconsideration.

The claims as amended are novel over the Taguchi reference because the Taguchi reference does not disclose any conductive ink compositions that comprise both a conductive particulate material (e.g., carbon black) and a conductive flake material.

Moreover, with regard the assertion in the Office Action that the acid values would be inherent, it is the obligation of the Office to prove that it is so, and no proof has been offered. Why couldn't the acid number be, for example, 110? or 150?

Furthermore, the Taguchi reference does not disclose an aromatic vinyl polymer.

Accordingly, for all of these reasons, Applicants submit that the Okuda reference does not anticipate the present invention. Withdrawal of the rejection and reconsideration of the claims are respectfully requested.

Rejection Under 35 U.S.C. § 103(a) over Yoshimura et al. in view of Okuda et al. and Further in

View of JP 08-231906 or Kuwajima et al.

Claims 1-19 have been rejected as unpatentable over Yoshimura et al, JP 11-302587 in view of Okuda et al, U.S. Patent 5,705, 098, and further in view of JP 08-231906 or Kuwajima et al., U.S. Patent 5,951,918. Applicants respectfully traverse the rejection as applied to the amended claims and request reconsideration.

The Yoshimura patent does not teach the present invention for the reasons already mentioned.

The Okuda document, as has been pointed out, fails to disclose a conductive ink and fails to disclose any composition containing both a conductive particulate material and a conductive flake material.

The Taguchi reference, as discussed already, does not disclose any conductive ink compositions that comprise both a conductive particulate material (e.g., carbon black) and a conductive flake material.; does not disclose a composition containing an aromatic vinyl

polymer; and does not disclose, explicitly or inherently, the acid numbers of the present claims.

Further, as noted above, the JP 11-302587 does not supply this deficiency.

The Kuwajima document describes an electrically conductive paste for screen printing, as is described in the background of the present application. None of the references suggests how to overcome the problems associated with this technology as the present inventors have described in paragraphs 4-7. The JP '906 patent, on the other hand, has to do with ink jet inks, which must have extremely low viscosities. There is no suggestion whatever or how to make such low viscosity materials print conductively. As the prior art paste screen inks underscore, conductive compositions tend to be rather thick.

The Office Action asserts, without support, that the only distinction between a paste or paint and an ink would be its viscosity. The cited passage does not appear to support this contention. Applicants respectfully disagree and request that the Examiner provide the proper proof of the contention.

The Office Action further states that it would be obvious to modify Yoshimura by incorporating carbon or graphite. Since the Yoshimura patent concerns metallic-effect, not conductivity, there is no motivation to make such a modification.

The Office Action states it would be obvious to include or substitute "the conductive particles" (of which composition?) with the Okuda oxides. However, a substitution would not meet the requirements of the claimed invention, and a combination would not render the metallic ink transparent.

Moreover, applicants disagree that all of the references are in the analogous art of inks comprising conductive particles, for the reasons already discussed in the earlier sections.

Because there is no motivation to combine the references in the way suggested, nor would the suggested combination appear to meet all of the claim limitations, Applicants submit that the claims are patentable over the cited references. Reconsideration of the claims is thus respectfully requested.

CONCLUSION

It is believed that all of the stated grounds of rejection have been properly traversed, accommodated, or rendered moot. Applicant therefore respectfully requests that the Examiner reconsider and withdraw all presently outstanding rejections. It is believed that a full and complete response has been made to the outstanding Office Action, and as such, the present application is in condition for allowance. Thus, prompt and favorable consideration of this amendment is respectfully requested. If the Examiner believes that personal communication will expedite prosecution of this application, the Examiner is invited to telephone the undersigned at (248) 641-1600.

Respectfully submitted,


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